

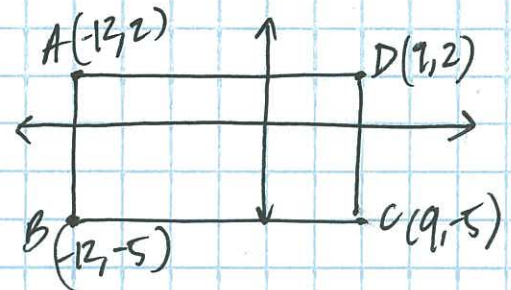
CW #24 - Area & Perimeter Application

- #1) G: a.) Find length & width of ABCD.
 b.) Find coordinates of A, B, & C knowing D is (9, 2)

R: • Rectangle in coordinate plane
 → sides are parallel

- 3 times as wide as it is tall
 - $P = 2L + 2W$
 - $P = 56$
- $L = \text{tall} = x$
 $W = \text{wide} = 3x$

Picture:



A: I will use perimeter formula to solve for dimensions. Once I know the dimensions, I can find the coordinate points of A, B and C b/c I will know the distance each point is away from another

S: a) $P = 2L + 2W$
~~56~~
 $56 = 2(x) + 2(3x)$
 $56 = 2x + 6x$
 $56 = 8x$

tall = $x = 7$ units wide $3(7) = 21$ units
 y-value x-value

b.) Subtracting the value of 7 for y-value & 21 for x-value:

A(-12, 2)
 B(-12, -5)
 C(9, -5)

P: ✓: $2(7) + 2(21)$
 $14 + 42$
 $= 56$

When I plug my answers back in, I get 56 back as my perimeter

✓: When I subtract 7 for y-value & 21 for x-value, and plot the points, these are reasonable coordinates for my rectangle!

$$1.) \quad 4(x+5) = 2(x+3) + 2(x+7)$$

$$4x + 20 = 2x + 6 + 2x + 14$$

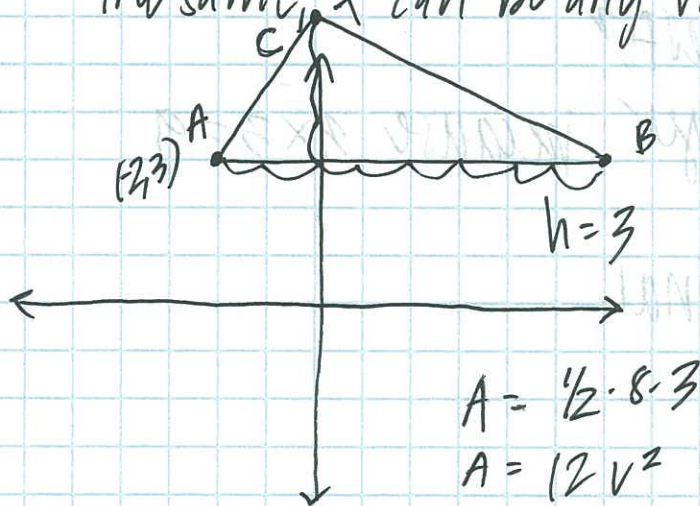
$$20 = 20$$

all real values for x !

$$\checkmark: \quad 4x + 20 = 4x + 20$$

since the expression for both perimeters are the same, x can be any value

2.)



3.)

	x	x	1	1	1
x	x^2	x^2	x	x	x
1	x	x	1	1	1

$$(x+1)(2x+3) = 2x^2 + 3x + 2x + 3$$

$$2x^2 + 5x + 3$$

these match up!

NO!

~~scribbles~~
~~scribbles~~

4) guess width P

$$2(W) + 2(W+8) = 66$$

$$2W + 2W + 16 = 66$$

$$4W = 50$$

$$W = 50/4$$

5) A.) $4 \times 10 = 40 \text{ ft}^2$

$$3(4) \times 3(10) =$$

$$12 \times 30 = 360 \text{ ft}^2$$

$$\frac{360 \text{ ft}^2}{40 \text{ ft}^2} = 9 \text{ times larger because } 3 \times 3 = 9$$

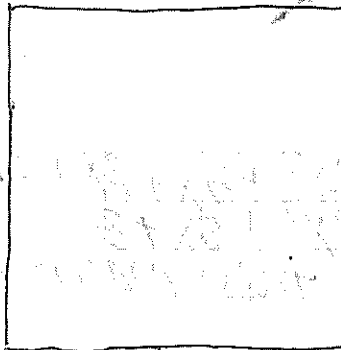
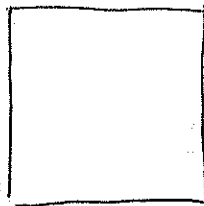
B.) $2(4) + 2(10)$ original:

$$8 + 20 = 28$$

$$28(3) = 84$$

3 times larger

6.)



1	1	x	x
2	x	4	x
3	1	1	1

Have students trace & cut out to arrange

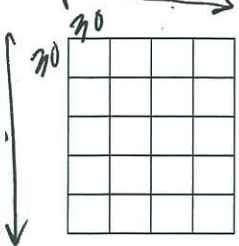
Name: _____ TP: _____

Failure to show work on all problems or use complete sentences will result in a LaSalle.

1) Each tile below measures 30 in by 30 in.

a. What is the perimeter and area ~~10,000~~ of this rectangle?

b. Make a new rectangle with the same perimeter but different area and give the length and width using the same size tiles.



G

- a.) The goal is to find the area & perimeter of the rectangle.
b.) The goal is to find a new rectangle w/ different area, different length & width, but same perimeter.

R

~~Formulas:~~ Formulas: $A = l \cdot w$ $P = 2l + 2w$

~~30 in~~  each tile: 30 in \times 30 in

A

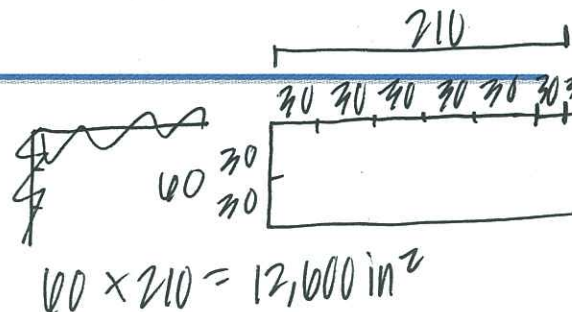
- I will find length & width of original shape
- I will use formulas to solve for area & perimeter
- I will change dimensions, but keep same perimeter by guess and check

S

a.) $A = l \cdot w$
 $= 150 \times 120$
 $= 18,000 \text{ in}^2$

$P = 2l + 2w$
 $= 2(150) + 2(120)$
 $= 540 \text{ in}$

b.



P

I know my answer is correct b/c the perimeter is the same as part b, but my answer for area is different

2) You work for a fencing company. A customer called this morning, wanting to fence in his 1,320 square-foot garden. He ordered 148 feet of fencing, but you forgot to ask him for the width and length of the garden. Because he wants a nicer grade of fence along the narrow street-facing side of his plot, these dimensions will determine some of the details of the order, so you do need the information. But you don't want the customer to think that you're incompetent, so you need to figure out the length and width from the information the customer has already given you. What are the dimensions?

G

Three times the width of a certain rectangle exceeds twice its length by 3 inches, and 4 times its length is more than perimeter. Find dimension

G: Find dimensions of rectangle

R

A

S

$$\begin{aligned} 2L + 2W &= 148 \\ L + W &= 74 \\ L \times W &= 1320 \\ W &= \frac{1320}{L} \\ L + \frac{1320}{L} &= 74 \end{aligned}$$

P

$$\begin{aligned} 2W &= 2L + 3 & W &= \frac{2}{3}L + 1 \\ 4L &= P + 12 \\ \text{OR } 4L &= (2L + 2W) + 12 \\ 4L &= 2L + 2\left(\frac{2}{3}L + 1\right) + 12 \\ 4L &= 2L + \frac{4}{3}L + 2 + 12 \\ 2L &= \frac{4}{3}L + 14 \\ -\frac{4}{3}L & & -\frac{4}{3}L & \\ 2\frac{2}{3}L &= 14 \\ L &= 21 \\ W &= \frac{2}{3}(21) + 1 \\ &= 15 \end{aligned}$$

STAY READY.